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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,264	10/04/2005	Kimiaki Tsutsui	273634US0PCT	1847
22850	7590	07/20/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
			EXAMINER	
			LISTVOYB, GREGORY	
			ART UNIT	PAPER NUMBER
			1711	
			NOTIFICATION DATE	DELIVERY MODE
			07/20/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdoCKET@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/538,264

Applicant(s)

TSUTSUI ET AL.

Examiner

Gregory Listvoyb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/06/05 and 7/25/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: 6/10/2005 and 6/11/2007.

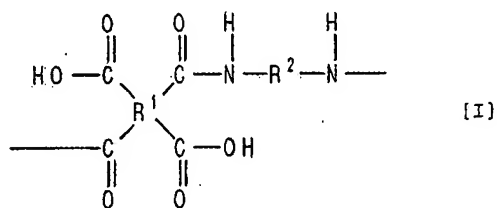
Claim Objections

Claims 5-7 objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 5-7 not been further treated on the merits.

Claim Rejections - 35 USC § 102/103

Claims 1 and 4 rejected under 35 U.S.C. 102/103 as being unpatentable over Sawahara et al (US 6294639) herein Sawahara.

Sawahara discloses a liquid crystal aligning agent comprising a polyimide precursor having a structural unit represented by the formula (I) (see Abstract):

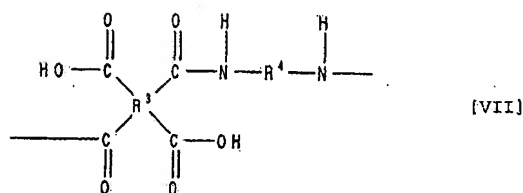


where R1 is a tetravalent organic group constituting a tetracarboxylic acid which has an alicyclic structure, meeting the limitations of Claim 4 (see Abstract) and R2 is a bivalent organic group constituting a diamine.

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Sawahara teaches that R1 is bicyclo[3,3,0]octane-2,4,6,8-tetracarboxylic dianhydride (BODA) (see Example 1), which is the same material as uses in the Application.

In addition, Sawahara discloses a polyimide, having formula (VII):



where R3 is a tetravalent organic group constituting a tetracarboxylic acid, and R4 is a bivalent organic group constituting a diamine, such as one having repeating CH₂ groups in the structure (i.e. 1,2-diaminoethane, 1,3-diaminopropane, 1,4-diaminobutane and 1,6-diaminohexane, see Column 8, line 35)).

Sawahara teaches that polyamic acids of structures (I and VII) can be used together in preparation of a liquid crystal aligning agent (see Example 10).

Sawahara does not disclose volume resistivity values for his composition.

However, he discloses a high voltage holding ratio(see Example 10), which depends on a polyamide structure and characterizes electrical resistance of the liquid crystal aligning agent. In Examiner's position, since Sawahara and the Applicant use

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polyamic acids of similar structure, Sawahara's composition inherently has a volume resistivity values between $10E10$ to $10E14$ Ohm/cm.

Claim Rejections - 35 USC § 103

Claims 3 and 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Sawahara in combination with Miyama et al (US patent 6808766) herein Miyama or Kondo et al (US 2006/0024452) herein Kondo.

Sawahara discloses a liquid crystal aligning agent comprising two polyamide precursors. (see discussion above).

Sawahara does not teach that R2 contains 10-100% of bivalent organic group having a nitrogen atom.

Miyama discloses a liquid crystal aligning agent comprising a polyimide precursor having alicyclic tetracarboxylic acid anhydride (see Example 54) and diamine, containing Nitrogen atom in organic radical (such as diaminodiphenylamine, which used in the Application and meets the limitations of Claim 3, see Column 11, line 40).

Miyama teaches that his polyimide is suitable for preparation of liquid crystal aligning agent using UV polarized light (see Column 3, line 45) to decrease an amount of irregularities formed on the alignment film (see Column 2, line 50).

Therefore, it would have been obvious to a person of ordinary skills in the art at the time of the invention was made that use such monomer as diaminodiphenylamine in Sawahara's polyimide precursor allows to prepare liquid crystal aligning agent using UV polarized light, which decreases an amount of irregularities formed on the alignment film.

Kondo discloses an aligning agent for liquid crystal display comprising a polyimide having 30-100mol % of 3,6 diaminocarbazole (the same diamine as one used in the Application) and diamine, containing (CH₂)_n groups, such as 1,6 diaminohexane (see line 0017 and Example 1). Tetracarboxylic acid dianhydride part has an alicyclic structure (see Example 1).

Kondo teaches that the for liquid crystal display aligning agent has excellent electric properties and less susceptible to decrease of the contrast or persistence of vision (see line 0045).

Therefore, it would have been obvious to a person of ordinary skills in the art at the time of the invention was made to use 30-100mol % of 3,6 diaminocarbazole in

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Sawahara's polyimide precursor to obtain an aligning agent for liquid crystal display, which provides a good contrast and persistent of vision.

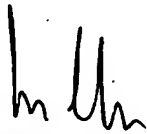
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory Listvoyb whose telephone number is (571) 272-6105. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Listvoyb
Examiner
Art Unit 1711

GL


James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700